



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/740,751	12/19/2000	Tongbi Jiang	23804-P002C2	8773

7590 10/03/2007
TERRIL G. LEWIS
WONG CABELLO, LLP
20333 SH 249, SUITE 600
HOUSTON, TX 77070

EXAMINER

CHANG, RICK KILTAE

ART UNIT	PAPER NUMBER
----------	--------------

3726

MAIL DATE	DELIVERY MODE
-----------	---------------

10/03/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/740,751

Applicant(s)

JIANG ET AL.

Examiner

Rick K. Chang

Art Unit

3726

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-96 is/are pending in the application.
- 4a) Of the above claim(s) that are not listed in item 6 below is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-30 and 47-55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>of record</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 18-19, 26, 30, 47 and 53 are rejected under 35 U.S.C. 102(b) as being anticipated by Sanborn et al (US 4,916,808).

Sanborn discloses a substrate 18; a pad 20; apertures 22 and 24 are concentric; a positive CTE material (16 is a metal and inherently has positive CTE); a negative CTE material (13 is a dielectric and inherently has negative CTE); it is inherent that when 15 is in a state of uncured or semi-cured will act an interfacial material to permit relative movement; linear height of 22 is smaller than linear height of 24. It is inherent in the printed circuit board manufacturing art to provide a different material for 13 and 16 having either negative or positive CTE depending on what is being mounted thereon.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 20 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burgess (US 6,211,485) in view of Romanklw (US 3,602,635).

Burgess fails to disclose silicon dioxide.

Romanklw discloses silicon dioxide (Fig. 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Burgess electronic device by providing silicon dioxide for layer 16 in Fig. 2 to isolate an IC from another conductor layer, as taught by Romanklw, for the purpose of providing a high temperature dielectric material.

5. Claims 21 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burgess (US 6,211,485) in view of Official Notice.

Burgess fails to disclose that the first material is a polyimide.

Official Notice is taken that it is well known in the art to provide polyimide for layer 16 in Fig. 2 to isolate an IC from another conductor layer to separate conductors from each other in a multilayered PCB.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Burgess electronic device by providing polyimide for layer 16 in Fig. 2 to isolate an IC from another conductor layer, as taught by Official Notice, for the purpose of separating conductors from each other in a multilayered PCB.

6. Claims 22-25 and 50-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burgess (US 6,211,485) in view of Chandra et al (US 5,935,638).

Burgess fails to disclose that the second material is zirconium tungstate.

Chandra discloses zirconium tungstate (col. 4, lines 60-63).

Art Unit: 3726

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Burgess by providing zirconium tungstate, as Chandra, for the purpose of providing a high dielectric constant material.

At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to provide single-crystal, amorphous or polymer bound zirconium tungstate because Applicant has not disclosed that incorporating single-crystal, amorphous or polymer bound zirconium tungstate provides a novel device, is used for a particular purpose, or solves a stated problem. Therefore, it would have been an obvious matter of design choice to modify Burgess/Chandra to provide a high dielectric constant material.

7. Claims 27 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanborn et al (US 4,916,808) in view of Wilson (US 5,966,803).

Sanborn fails to disclose that the substrate is ceramic.

Wilson discloses that the substrate is ceramic (col. 1, line 57).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sanborn by providing ceramic, as taught by Wilson, for the purpose of providing a substrate using a cheap and abundant material.

8. Claims 28 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanborn et al (US 4,916,808) in view of Wilson (US 5,966,803).

Sanborn fails to disclose a package of an IC.

Wilson discloses a package of an IC (col. 1, line 57).

Art Unit: 3726

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sanborn by providing a package of an IC, as taught by Wilson, for the purpose of forming an electronic device.

9. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sanborn et al (US 4,916,808) in view of Official Notice.

Sanborn fails to disclose forming the first material using a spin-on process followed by a photo-define and –etch process.

Official Notice is taken that it is well known in the art to form a polymer material using a spin-on process followed by a photo-define and –etch process to apply uncured material on a substrate and to form vias therein.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sanborn by form a polymer material using a spin-on process followed by a photo-define and –etch process, as taught by Official Notice, for the purpose of applying uncured material on a substrate and to form vias therein.

Response to Arguments

10. Applicant's arguments filed 1/15/07 have been fully considered but they are not persuasive.

Col. 5, lines 35-36 suggests any plastic dielectric laminate can be used. Based on this information, element 40 has a negative CTE. Please consider the following references: US Patent No. 6,555,414 (col. 7, lines 16-24) and US Patent No. 5,557,066 (Abstract, lines 1-10).

Interviews After Final

Art Unit: 3726

11. Applicant note that an interview after a final rejection must be submitted briefly in writing the intended purpose and content of the interview (the agenda of the interview must be in writing). Upon review of the agenda, the Examiner may grant the interview if the examiner is convinced that disposal or clarification for appeal may be accomplished with only nominal further consideration. Interviews merely to restate arguments of record or to discuss new limitations will be denied. See MPEP 714.13 and 713.09.

Conclusion

12. Please provide reference numerals (either in parentheses next to the claimed limitation or in a table format with one column listing the claimed limitation and another column listing corresponding reference numerals in the remark section of the response to the Office Action) to all the claimed limitations as well as support in the disclosure for better clarity (optional). Applicants are duly reminded that a full and proper response to this Office Action that includes any amendment to the claims and specification of the application as originally filed requires that the applicant point out the support for any amendment made to the disclosure, including the claims. See 37 CFR 1.111 and MPEP 2163.06.

13. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

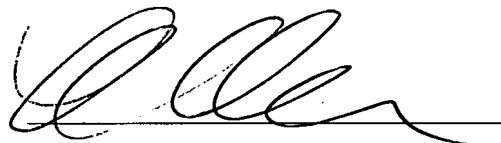
Art Unit: 3726

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick K. Chang whose telephone number is (571) 272-4564. The examiner can normally be reached on 5:30 AM to 1:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Bryant can be reached on (571) 272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Richard Chang', with a horizontal line extending to the right.

**RICHARD CHANG
PRIMARY EXAMINER**

Application/Control Number: 09/740,751

Page 8

Art Unit: 3726

RC

March 23, 2007

Form PTO-1449 (modified)

Atty. Docket No.
102-0118US2Serial No.
09/740,751

List of Patents and Publications for Applicant's

Inventor/Applicant:

Tongbi Jiang et al. / Micron Technology, Inc.

INFORMATION DISCLOSURE STATEMENT

Title: Method for Forming Novel Zero Force
Insertion Sockets Using Negative Thermal
Expansion Materials (*as amended previously*)Filing Date:
12/19/00Group:
3729

(Use several sheets if necessary)



U.S. Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date of App.
TRC/	A1	4,513,055	Apr. 23, 1985	Leibowitz	428	245	
	A2	6,274,932	Aug. 14, 2001	Mikagi	257	754	
	A3	6,187,700	Feb. 13, 2001	Merkel	501	32	
	A4	5,497,545	Mar. 12, 1996	Watanabe et al.	29	830	
	A5	5,919,720	Jul. 6, 1999	Sleight et al.	501	126	
	A6	5,641,291	Jun. 24, 1997	Sueki et al.	439	83	
	A7	4,950,173	Aug. 21, 1990	Minemura et al.	439	82	
	A8	5,607,313	Mar. 4, 1997	Nyman	439	83	
	A9	5,123,849	Jun. 23, 1992	Deak et al.	439	66	
	A10	5,387,121	Feb. 7, 1995	Kurz	439	342	
	A11	5,433,778	Jul. 18, 1995	Sleight	106	401	
	A12	5,514,360	May 7, 1996	Sleight et al.	423	593	
TRC/	A13	5,466,169	Nov. 14, 1995	Lai	439	264	

RECEIVED
AUG 18 2004

TECHNOLOGY CENTER R3700

Foreign Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Country	Class	Sub Class	Translation Yes/No
	B1						

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
TRC/	C1	T.A. Mary et al., "Negative Thermal Expansion from 0.3 to 1050 Kelvin in ZrW_2O_8 ," <i>Science</i> , Vol. 272, pp. 91-93 (Apr. 5 1996).
TRC/	C2	Anonymous, "Seimens Demonstrates Fingertip Chip Sensor," <i>Semiconductor International</i> , pp. 33-34 (Apr. 1998).

EXAMINER: /Rick Chang/

DATE CONSIDERED: 03/23/2007

EXAMINER: INITIAL IF REFERENCE CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED. INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.